WHIRRAKEE

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MONTHLY NEWSLETTER OF THE BENDIGO FIELD NATURALISTS CLUB

Bendigo Field Naturalists Club Inc.

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Membership of the Bendigo Field Naturalists Club is open to all those interested in Natural History. The subscription rates are: Single $34; Family $40; Concession: Single $28.50; Family $34. *Whirrakee* subscription only is $34. These rates include GST.

General meetings are held on the second Wednesday of each month. The venue for General meetings is the Golden Square Senior Citizens Building, Old High Street, Golden Square. The invited speaker at general meetings starts at 8:00pm and meetings conclude with supper.
If a workshop is held prior to the meeting, it will be advertised and it usually starts at 7.00pm.
The Annual Meeting is held in September.

Committee meetings are held on the third Wednesday of each month at 7:30pm. Members of the Committee are the Office Bearers listed above, together with the following members:
Kate Lottkowitz; Trevor Marshall; Rob Moors, Jan Orr, Stan Pelczynski; Bob Ruddick

Excursions Excursions are conducted irregularly and are advertised on the diary page of the *Whirrakee*. The assembly point for excursions is the Golden Square Senior Citizens Building, unless otherwise specified. In addition to local excursions, campouts are held several times each year, usually coinciding with long weekends or holiday periods.

The Bendigo Field Naturalists Club has one active sub-group:

Fauna Study Group: meets on the fourth Wednesday of the month at 7:30pm in the Golden Square Senior Citizens Building.

Chairman: John Burtonclay, Fadersons Lane, Mandurang (5439 5710)
Secretary: Bill Holsworth, 13 Nabilla Crs., Bendigo (5443 4063)
Equipment Officer: Maurie Lewis (0407 427179)

Front Cover: Photographer: Sabine Wilkens

This political statement appeared in the sky above Bendigo a few weeks ago, on the same day a group of anti-park protesters were assembling in town. The protesters were showing their concern about the upcoming legislation to be presented to the Victorian Parliament. If passed, this will mean that large areas around Bendigo will be declared Regional or National Park and some traditional activities in these areas will be restricted. How successful the proposed parks will be, will depend on many things, amongst them, community support and funding, to manage such parks appropriately. Some parks, especially those abutting housing developments will represent a real challenge in that respect.
The sky statement faded quickly, but from what I heard, many people saw it and sympathised with it.

WHIRRAKEE

Monthly Newsletter of the Bendigo Field Naturalist Club
Vol. 23, No. 4, May 2002
Whirrakee takes its name from the Whirrakee Wattle (*Acacia williamsonii*) which is virtually endemic to the Bendigo region

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Authors are responsible for the accuracy of the information they use and also for any opinions expressed in their articles.
Contributions will be included as soon as possible after they are received, although articles received more than one week after the monthly General Meeting will probably be too late for inclusion in the next issue of *Whirrakee*.
Articles in *Whirrakee* may be reproduced, but permission should be obtained from the Bendigo Field Naturalists Club, and acknowledgment should be given to the author and the Club. Some back issues are still available on request.

Editors' Note
We are very lucky to have members like Alf Howe who share their memories with us. This edition has two pieces written by Alf – what a different place he talks about, compared to today.... (regular 'Bendigo Advertiser' readers may also have seen Alf's contributions to the 'letters' page).
On page 9 of this edition is a report of a new insect order. How are new orders determined? In this case it seems to have been decided because the animal looks (and behaves?) differently from existing groups. As this is a fairly subjective and potentially confusing way of classifying, modern taxonomists are trying to use evolutionary criteria to decide the closeness of relationships, for example by looking at shared characteristics between groups (anatomical or molecular homologies). Perhaps this research is still to come or it has already been published but was not picked up by National Geographic News. Nevertheless, a very interesting story!
Lastly, we hereby announce that the Mammal Study Group is now officially called the Fauna Study Group (just in time for this month's speaker whose topic is 'fish').

A Wet Workshop
conducted by Matthew Comer
Author: Sabine Wilkens

'Water Plants' was a tricky topic for a workshop as all the material was dripping wet and very delicate. Matthew first gave us an introductory talk and then handed round the various specimens for us to admire.
Water plants are those plants that grow in water or on the edge of water and are tolerant to submergence, either permanently, seasonally or more irregularly. There are many introduced, weedy water plants and some cause considerable economic damage. However, the evening was devoted to native, Central Victorian species.

Some water plants are emergent, i.e. they stick up out of the water. Matthew talked about *Triglochin striatum* (Streaked Arrowgrss), Another species of *Triglochin* that Matthew had with him is *T. procerum* (Water Ribbons). It has many leaves that float along the surface but has some upright ones as well.

Others water plants live a submerged life, that is their whole body largely occurs in the water, for example the pond weed, *Potamogeton.* Some species have two types of leaves, the submerged type and the emergent type. These two types look and feel different. We learned that the seeds of *Potamogeton* germinate better once they have been through a duck (this makes sense).
Vallisneria gigantea, the Ribbon Weed, another submerged plant, is an interesting one. It has separate male and female plants. The male flowers are released at the bottom of the pond and float up to the surface. With a bit of luck they make it through and meet a female flower up there, subtended on a very long stalk. After fertilisation, the flower with the developing seeds is pulled back under water by the stem corkscrewing and shortening in tight coils. Although it has a 'weedy' name, it is native to this region. Another name for this plant is Eelgrass (but that's confusing too as it is also the common name given to the seagrass, *Zostera meulleri*)

Some leaves also differ with age. The Swamp Lily (*Ottelia ovalifolia*) has strap-like leaves when young and lancet/shield-shaped leaves when older. It also has two different types of flowers. One type is drab and those never emerge from the water. They self-pollinate, possibly a back-up system if the emergent flowers, which only open in warmer weather and which look like normal lily flowers, do not get fertilised.

Other water plants are floating, Duckweed (*Lemna*) and *Azolla* are examples. *Azolla*, a fern, is interesting, when grown in sunshine the fronds are pinky/red, but when grown in shade they are green. *Azolla* have symbiotic Nitrogen fixers in their fronds and they allow this fern to grow in nutrient-poor or -unbalanced bodies of water.

Many water plants look obviously different to 'normal' plants and this look partly results from their life style:
Floating and submerged leaves are often floppy and delicate and have weak petioles. In water, the leaves are buoyant, and they do not require supportive wood or fibres to hold them up to the sun to conduct photosynthesis. Matthew showed us a native Swamp Lily and the Yellow Fringe Lily, exquisitely beautiful plants, that look very delicate but are apparently "not that hard to establish".

Ludwigia peploides was completely new to me and very fascinating. It is called Water Primrose because it has yellow buttercup-like flowers. It has pneumatophores, roots that grow upwards from the soil and allow oxygen uptake when the plants are not submerged. Up to then, I thought only mangroves displayed such interesting adaptations!.
Another plant new to me was *Lilaeopsis*. It has upright, cylindrical, hollow leaves with very fine grooves that run down the length of these. Every few centimetres there was a horizontal supporting plate which made the plant look like an ancient horsetail, just a lot more delicate.

All the water plants Matthew brought along would look great in a garden pond or farm dam. These plants not just hold the soil together and buffer to some extent the run-off that enters the water body, they also allow insects to inhabit these parts and give emergent nymphs of dragon and damsel flies a way out of the water. Both of these encourage other forms of pondlife.
Thanks Matthew, for transporting so many buckets of water with plants for the workshop for our enjoyment. They were borrowed from Marilyn Sprague's nursery and I do hope they all returned reasonably intact!

A Hundred Years of Bird Study
Book review by Dr. W. N. Holsworth

The Flight of the Emu: A hundred Years of Australian Ornithology 1901-2001 by Libby Robin, Melbourne University Press. 2001. 492 pages.

The book has 12 Chapters of well documented narrative, and 3 special sections highlighting the search and study of Night Parrots, Lyrebirds, and the Noisy Scrub-bird. Each chapter explores the history of several related themes. Five appendices, totally 70 pages list biographical details of the RAOU staff and officers, the prominent bird collectors, watchers and scientists. All the journals and newsletters specifically reporting on birds are listed and the location of all the Congresses and Campouts are detailed.

Although the title suggests only a century of history is considered, the story had to start about 230 years ago with the observations of the Dutch explorers and Captain Cook. Later, in the 1800's, the French naturalists came, collected, and returned with their specimens and observations to the Paris museum. The most important early recorder of Australian birds was John Gould who started by describing specimens collected by his brothers-in-law in 1833. Later John Gould and his wife Elizabeth came to Australia to collect, observe, sketch and paint the birds for the 7 part series *'Birds of Australia'* (1840 to 1848) and the *'Handbook of the Birds of Australia'* (1865). In the last quarter of the 19th century the study of birds shifted to Australian bird watchers and scientists whose collections stayed in Australia and whose publications were directed to the Australian reader.

The major part of the first chapter is not just about the events leading to the foundation in 1901, of the Australasian Ornithologists' Union (later as the RAOU, now renamed 'Birds Australia') and the journal *The Emu*, but it also describes the activities of other natural history societies. The Field Naturalists' Club of Victoria started in 1880 and published the *Victorian Naturalist* continuously since 1884. Even earlier (1820's) were several Philosophical, Scientific and Acclimatisation societies that professed an interest in Natural History.

The second chapter is mostly about the men (yes, men) who, in the first 25 years after Federation, explored Australia ornithologically. They collect birds, eggs and nests for their private museums, for sale, and some for the Government museums. The persons behind the names that may be familiar to Victorians are Campbell, Le Souef, Mathews, S. A. White, and most importantly, H. L. White. The controversy over collecting is further exposed in chapter 5. The collections were the essential basic material for attempts to fit Australian birds into the international schemes of common and scientific names and classification. Chapter 3 concentrates on this aspect of bird study by reviewing Mathews', Condon's and Schodde's lists of Birds of Australia. Arguments are still taking place over the correct or most appropriate scientific and common names. It is in this chapter (3) that the Bendigo Field Naturalists' Club is first mentioned. In 1947, F. G. Elford, Honorary Ornithologist at the National Museum of Victoria, gave a lecture to our Club in Bendigo titled, *'What's in a Name?'*

There are several topics in Chapter 4 that will be familiar to *Whirrakee* readers. The Gould League, established in 1909 by Leach, Supervisor of Nature Study for the Victorian Education Department, sponsored the first Bird Day 29 October 1909. In 1931 the NSW Gould League sponsored the first edition of Cayley's *What Bird is That?*

Chapter 5 introduces us to Crosbie Morrison's success in popularising an interest in birds and nature. Although bird photography and photographers are discussed there are about 300 photographs scattered throughout the book that emphasise the importance of the camera. Chapter 6, on migration and life histories bring Marc Cohn, as Secretary of the RAOU's Migration Committee in the 1920's, to the readers attention. Sadly, the Migration Committee failed to stimulate much interest in banding Australian birds.

The remaining chapters concentrate on topics such as field guides, Atlases and conservation. I found chapter 7 the most interesting because I know, or knew about most of the persons and events mentioned. It concentrates on CSIRO, the Museums and Universities. Ray Wallace's MA thesis topic introduces readers to the 'clash' between the professional and amateur that started at the RAOU Congress in 1968. That was only one of several problems within the organisation detailed in Chapter 8.

These are a few of the many topics that will interest all bird enthusiasts and I recommend you buy it, or borrow it from the Bendigo Public Library. (Cost about $69.95).

April General Meeting
Speaker: Catherine Fraser - The Secret Life of Compost

Author: Sabine Wilkens

In this meeting, Catherine was explaining her PhD thesis to us - but it was not one done in an ivory tower..... The project was initiated by EcoRecycle Victoria in a quest to reduce the amount of landfill. Apparently 50% of the land fill has traditionally been of organic nature and of this, much is of plant origin. Where space to accommodate the land fill is getting scarce, the chance to reduce the fill volume by composting or mulching the plant matter is attractive.

Mulching is quick as it just involves shredding the plant material but plant pathogens are able to survive for a very long time and may spread when the mulch is distributed. The advantage of composting is that it sanitises the plant material. However, the process will not be an economic or marketable proposition until it has been shown that the resulting compost is free of harmful bacteria, fungi and other pathogens as well as weed seeds.

Catherine's project involved testing a commercial composting method, used in Melbourne, for the ability to eliminate the pathogenic bacterium, *Pseudomonas syringae*. This bacterium which causes a disease in tomato, was being used as a representative of other similar economically important pathogens.

Composting works on the principle of piling up (shredded) plant remains and allowing naturally occurring micro-organisms, in the presence of oxygen, to break down this plant matter. As the microbes degrade the plant matter, the temperature in the pile rises and once high enough temperatures are reached, most microbes will die as other chemical reactions take over and complete the composting process. The result is a friable material that can be added to parks, orchards and gardens. In Melbourne, the demand for this compost has risen so dramatically that the suppliers cannot keep up and a war for the raw material has ensued. Fights for tree clippings and sabotaging of machinery have been known to occur.....wow!

Some interesting composting facts:

In a good composting pile, 50-60% moisture is ideal. There needs to be enough moisture to allow the growth of micro-organisms, yet not too much so the process becomes waterlogged. .
The carbon to nitrogen ratio should be about 25(-35) to 1, that way there is enough energy-giving material as well as mineral nutrients for the microbes to thrive.
The size of the pile is important too. If the pile is too small, the mass does not heat up properly, if it is too big, the lack of air movement becomes the limiting factor inside the pile.
As far as microbe numbers go, about 10^{10} colony-forming units per gram, that is 10000000000 microbial spores or cells that can start a new colony, per gram of compost, is sufficient to initiate and sustain decomposition.
The temperature distribution in the pile is also important. If it is uneven, composting does not proceed efficiently and some pathogens may not be killed (most plant pathogens need temperatures above 50°C to be killed).
Compost can combust seemingly spontaneously, i.e. once it gets above a certain temperature it ignites (above 150°C) A pile begins by smouldering and the worst thing you can do to put it out is to open it up..... then it will really burst into flames!
It has also been observed that as a result of environmental condition during composting, mutants of micro-organisms arise that can tolerate very high temperatures. This development can be potentially dangerous if these are pathogens like *Salmonella* and *E. coli,*
Lastly.....odours of composting heaps can be very interesting too...

As part of her research work, Catherine placed tomato leaves infected with the *P. syringae* into mesh bags and buried these at known positions in the compost pile. The temperatures that the bags were exposed to were also monitored. After varying amounts of time, the infected leaves were retrieved and the survival of the pathogen checked. It turned out that the bacteria exposed to temperatures of 50°C and above were killed within 24 hours, while the pathogen was able to persist for a week or so around the edges of the pile where it was only about 40°C.

Although Catherine's research has basically declared the process adopted by EcoRecycle to be safe for use and efficient in sanitising the compost, there may be a few other problems, like surviving seeds that have not been fully investigated.

In addition it needs to be realised that compost is not sterile, only sanitised - an important difference. Compost should always be treated with respect and caution. If you have a bag of it, open it carefully and water down the contents to avoid breathing in dust.

However, in spite of several uncertainties, the product is in high demand as it does wonders for end users: It causes healthier and larger fruit if used in orchards, it also suppresses disease and ameliorates certain soil toxicities.

Any more information about composting, as well as home composting tips are in:
"Guide to best practice composting green organics by Wilkinson *et al* (1998), published by EcoRecycle Victoria.
www.ecorecycle.vic.gov.au

The Battle of Living Roots and Salinity - Part 2

Author: Alf Howe

This article is a sequel to the one printed in Whirrakee, March 2001, page 4.

The first story of my experience with salinity sounded somewhat bleak as the area affected by salinity was actually some 60 acres out of 175 acres. The land had been totally cleared in the 1880s with the country being originally covered in Yellow Box, Grey Box, Black Buloke, Murray Pine and Sugarwood (which was locally called Dogwood). The farm had a series of low sandy ridges that were not salty. On the top of each ridge was a perch (or dry stream) of very deep soil on which we grew tomatoes. The crops were fairly heavy and were sold to the Epsom canning factory.

We started with one in five acre-foot water right in 1962 by which time Eildon had been completed and was full. The State Rivers and Water sent out engineers to see how much land could be commandeered for for irrigation. When an engineer visited us he stated that of all the properties he had visited in the northern irrigation district, we had the most grass. As a result he arranged to have a field day on our property to discuss salinity and pasture growing.

In 1991, I went to a field day at Tragowel Plains and the same solution that had been mentioned 30 years before were just being implemented. In 1964 our water allocation for irrigation was increased so we were able to grow lucerne a metre high with only one watering between cuts, with 4 or 5 cuts possible each year on the light sandy soil. We also grew a mixture of clovers and perennial rye grass on the flats enabling us to increase the number of milking cows as our carrying capacity had increased dramatically.

Our home garden flourished with peaches, plums, apricots and granny smith apples. However, pears and citrus fruits didn't thrive. Florence had dahlias and other flowers in abundance. To make the home garden larger, we even moved the fence further out. As a result of planting Athel trees in the garden, the water table level was lowered. By the time we retired, the farm had practically all "A" class soils. We actually stopped using the mould board plough in the sixties, while soon after that we stopped using sprays on the pasture. The drains were wide enough for us to use a tractor drawn slasher.

The overall result of our experience suggest that in normal seasons good ground cover will not only keep salinity down but even reduce its effects.

Correction to VFNCA News, April *Whirrakee*

A mistake in the previous *Whirrakee* was (thankfully) noted. It concerns the name of the caravan park advertised for the October campout. The correct name is given below (in bold).

The next camp-out will be conducted by FNC Ballarat Friday 25th October - Sunday 27th October. The camp-out will be self-accommodating.
Activities will be based at the Horticutural Centre, corner of Gillies St and Gregory St.
Lake Wendouree Tourist Park is the suggested accommodation ph. 03 5338 1381, **(e-mail: lakewendouree@giant.net.au).**

"From Your Street to Your Creek"

by Bronwen Burr
Regional Waterwatch Coordinator, NCCMA

The North Central Management Authority (NCCMA) will be hosting an event entitled "from your street to your creek" complementing the Bendigo Urban Stormwater Program with support from the City of Greater Bendigo. This event will be held at Lake Weeroona in celebration of World Environment Day on the 5th June.

We envisage up to 800 students will be participating in coordinated activities throughout the day. Activities will focus on urban Stormwater issues and will emphasise everyday actions to reduce the impact on local waterways.

The audience for this day will be senior primary and junior secondary students from local schools. This exciting day has been divided into two repeat sessions (morning and afternoon) with up to 400 students attending each session. A presentation welcoming students will be made at the start of each session. Students will then break into groups to partake in different activities around the lake.

Your organisation (BFNC) is one of several supporting organisations that will be involved in this event. Support on this day will be acknowledged through signage at the event and during the welcome presentations.

Participating student will receive a show bag on departure.
An invitation is extended to all interested members to attend the day, and assist or participate in activities being conducted.

If you would like to discuss this in more detail, contact me on 54401829.

Editor's note:
Our club will be involved in some way during this day. It is most likely that we will conduct an activity about weeds. If anybody has some ideas about organising a display, or about materials that can be included in the show bags, please let the committee know.

Response to Bill Holsworth's report "Native Vegetation on Sutton Grange Road to be protected - *Whirrakee* Vol. 23, No 3, April 2002.

by Barbara Pelczynska

Native Vegetation on Sutton Grange Road is not really protected - 16 trees of which 3 are old trees are going to be removed unless the Victorian Civil and Administrative Tribunal (VCAT) will rule otherwise. There are many objectors and the matter was taken to VCAT. The Council claims that upgrading the road by widening it and removing trees will increase the safety of the road for the speed limit of 100 kph. But, if safety is the main issue, then the road can also be made safer by imposing lower speed limits and appropriate signage instead of removing the trees. It is important to note that some people may be inconvenienced by the imposition of lower speed limit. But if the speed is lowered, for example from 100 kph to 80 kph, drivers will be losing only 9 sec per kilometre while reducing their breaking distance by 50 metres. Consequently their travel will be a lot safer to both themselves and the wildlife. And is not nature more important than few minutes of travelling time? So the struggle to protect the trees and the scenic look of the Sutton Grange Road is continuing.

I Remember..... a Sea of Red and Yellow

by Alf Howe

When the Howes came up from Ballarat in 1872 to Calivil, they found and left behind the gold diggings of Bendigo and reached the flatter country towards the Northern plains.
The trees were more spread and bigger, mainly Yellow Gums and Grey Box. The Yellow Gum gave way to Grey Box at 25km. Black Buloke (*Casuarina luehmannii*) also occurred there. Yellow Box became more noticeable at 35km, on the verge of the open plains.
The red plains were covered with a sharp-leaved Matt Rush, which, when in flower, gave a sweet honey smell. The flower stems, when eaten, tasted like honey.

The timber country before the plains had an understorey of Golden Wattle, Gold Dust Wattle, quite a bit of Sweet Bursaria and patches of Weeping Pittosporum.

This bit of history was gleaned from my father and older members of the family, up to the time when I was about 35 years of age.
In 1937, I was working Yarragone est., west of Tandarra before it was sold and cut up. I can still remember tussocky plains with a band, 40 or 50 metres wide, without tussocks, where Cobb and Co coaches used to run between Raywood and Durham Ox and further on.

A lot of the plains were broken up for cultivation in the late 1940s after 10 years of low rainfall and devastating drought. The driest was 1938, I was working in Prairie, the farmer was an official rainfall recorder and 143mm were recorded.

The land had become bare, the only way the farmers could get something to grow was to plough and sow seeds.
The Calivil area was the last to be settled, being heavily timbered ridges of Murray Pine, Yellow Box, Grey Box and Sugarwood (*Myoporum*). The sugarwood was practically all cut out during the 1902 drought to feed cattle and sheep. Golden Wattle grew into 5m trees. Golddust Wattle up to 3m, Wild Apricot or Weeping Pittosporum up to 7m. When I was young, I saw patches of Needlewood (*Hakea*) and *Acacia salicinia* (Willow Wattle) 12 or 13m high. The Murray Pine were big trees, 40feet high, with 3 feet diameter trunks and a lot of the undergrowth was Australian Saltgrass (*Distichlis distichophylla*) which was eaten out by rabbits. Wallaby grass and two or three different Stipa, the prettiest being *Stipa elegans*. There were also Early Nancy, Yellow Star and Stackhousia.

I can still remember patches of uncultivated ground covered with wild flowers, a sea of red and yellow. Red Swainsona and, in the swamps, the big Blue Swainsona.
The Dingee Prairie Railway Res. to Mitiamo was a favourite place, the trains stopping for people to pick wild flowers in the old days....

Book Review
Low, Tim - "Feral Future, the Untold Story of Australia's Invaders";
Penguin, 2001

by Barbara Pelczynska

A new updated edition of Tim Low's 1999 book, 'Feral Future', has been published last year. It contains an additional preface in which Tim Low points out that in the time between the two editions, Australia experienced the introduction of fire and crazy ants, of the fringe spider flower and Mexican feather grass. It also experienced the foot - and - mouth alert, the expansion of cane toad's territory to Kakadu, the spread of Mundulla yellow disease of the eucalypts and, as a result of the introduction of the bumblebee to Tasmania, a dramatic increase in the population of the tree lupin infestation.

These events, he says, and the opposition of governments and farmers to any effective measures to control some of the infestations, has made him more pessimistic now than when he wrote 'Feral Future' in 1999.

The good news, he claims, is a massive boost to the quarantine funding in the wake of the foot - and - mouth scare and the plans to set up a new national conservation group "whose whole and sole focus" according to Barry Traill, "is to protect us from further incursions and to stop existing pests spreading more and more".

I do strongly recommend that the book be widely read and promoted.

We still have sufficient remnants of our biodiversity left to achieve ecological sustainability, if only we rid ourselves of our past and current anthropocentric approach to the natural environment. And, in my opinion, Tim Low's book can help us to do so.

Adopt - A - Highway Program

Author: Matthew Comer

The latest highway clean-up was held on Sunday 14th April. Four club members attended (including myself), as well as two new faces who had attended the previous week's meeting.
Once again a significant quantity of rubbish was collected to fill my ute an the efforts of those who attended are greatly appreciated.

The following Wednesday at the committee meeting, some of the ongoing difficulties with the adopt-a-highway program were discussed.
Most of the working bees have only been attended by a small number of members and the committee felt that these members' efforts could be better spent on other club activities.
The disposal of the rubbish collected has also been an ongoing issue since VicRoads ceased to collect the bags after each clean-up. It has been up to the club to transport the rubbish and with only one ute (with limited space) this has been a challenge.
Therefore it was agreed that the club should discontinue the adopt-a-highway program with VicRoads.

Thank you to all those who supported the program at the various working bees.

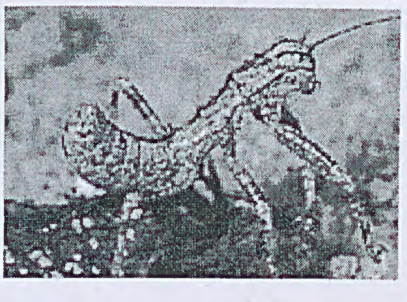
New Insect Order Found in Southern Africa
by Bijal P. Trivedi
from: National Geographic Today
(http://news.nationalgeographic.com/news/2002/03/0328_0328_TVstickinsect.html)
March 28, 2002

For the first time in 87 years, researchers have discovered an insect that constitutes a new order of insects. Dubbed "the gladiator" (after the recent movie), it lives in the Brandberg Mountains of Namibia, on the west coast of Southern Africa.
Entomologist Oliver Zompro of the Max Planck Institute of Limnology in Plön, Germany, who identified the creature as unique, said it resembles "a cross between a stick insect, a mantid, and a grasshopper."
It differs from a stick insect, Zompro noted, because its first body segment is the largest. Unlike a mantid, it uses both its fore and mid legs to catch prey, and unlike a grasshopper, it can't jump.
Growing up to four centimeters (1.6 inches) long, "the gladiator" is carnivorous and nocturnal. It lives at the base of clumps of grass that grow in rock crevices. "It's a big insect and difficult to overlook. That's what is so amazing" about the finding, Zompro said.

Zompro, a specialists in stick insects first suspected that he was seeing a new insect order while examining fossils of stick-like insects sent to him by amber collectors in Germany. The oldest known specimen was encased in a 40-million-year-old chunk of golden amber. Over a period of six months, Zompro received nearly two dozen specimens that led him to conclude he had discovered a new order, but one that he thought was now extinct. One amber nugget contained a perfectly preserved adult specimen. Another fossil had captured the insect in the cannibalistic act of eating another.

After finding similar specimens in more recent collections at museums in London and Berlin, he set out to determine whether the insect—which had been presumed extinct — might still be found in the wild.
When Zompro dissected the specimen from the Berlin Museum, he found the remains of insects in its gut, indicating that the stick-like insect was a carnivore. All other known stick-like insects are plant eaters. "At this point, I was sure that I had found an absolutely new order of insects," said Zompro. The existence of the insect was confirmed last month on an expedition to the Brandberg Mountains, jointly sponsored by Conservation International, the Max Planck Institute, and the National Museum of Namibia.

The discovery of the new insect order, which has been named Mantophasmatodea, increases the number of insect orders to 31. "This discovery is comparable to finding a mastodon or saber-toothed tiger," said Piotr Naskrecki, director of Conservation International's new Invertebrate Diversity Initiative.



Diana Wall, an ecologist at Colorado State University in Fort Collins, called the discovery "tremendously exciting" and said it could give scientists "a new perspective on how life fits together." "This new order could be a missing link to determining relationships between insects and other groups," she said, adding: "Every textbook discussing the orders of insects will now need to be rewritten." No new order of insects has been identified since 1915.

Both of the insects Zompro observed in London and Berlin appeared related to the 40-million-year-old fossilized insect encased in amber. But the museum specimens had been collected during expeditions in the last century, suggesting that the insect was not extinct.

Zompro photographed the three specimens and sent the pictures to museums in Africa and South America, requesting information about any insects that appeared to be similar.

The National Museum of Namibia responded with a specimen that had been found in the Brandberg Mountains. It appeared to be from the same insect group. Eugene Marais, the museum's curator of entomology, met with Zompro in Berlin and examined the original amber fossil. Based on their analysis, Zompro made plans to travel to Namibia to search for the insect.

During the trip, Zompro collected a dozen of the insects, which he carried back to his lab in Germany to study mating, feeding, and other forms of behavior in the insects. Aggressive tendencies became one area of interest—a couple of the insects apparently were eaten during the the trip back.

Zompro plans to return to Namibia to study the distribution of the insect in Namibia. Naskrecki of Conservation International said Zompro's discovery is important because it "tells us that there are places on Earth that act as protective pockets, preserving tiny glimpses of what life was like millions of years ago." The Namibian insects, he added, "are one of the last living witnesses of a time when America and Africa were still part of the same land mass. This order was thought to be extinct for 35 to 50 million years."

Bendigo Field Naturalists Club Inc.

Speaker Syllabus for General Meetings 2002– Second Wednesday 8:00 pm

Please check each **WHIRRAKEE** for additional events or changes. If a workshop is planned, it will start at 7:00pm. The speaker will be introduced at 8:00 pm.

Date - 2001	Topic	Speaker
8 May	The Box-Ironbark Living Records Project	Peter Johnson and Paul Gullan
12 June	Monitoring Changes in Box-Ironbark Forests	Ern Perkins
10 July	Trust for Nature and its Conservation Activities	Michael Looker
14 August	Spineless Wonders - an Introduction to the Importance of Invertebrates	Dr Alan Yuen
11 September	***Annual General Meeting***	
9 October	Grevillea Hunting Around Australia	Neil Marriott
13 November	What has been achieved in Waterways Management in the NC Region	Greg Peters
11 December	**Christmas Dinner**	

Diary

The General, Bird Observers Group and Fauna Study Group meetings are held at the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise indicated.

General Meeting

Wednesday, May 8 **7.30pm**
This month, Peter Johnson and Paul Gullan will talk about the 'Box-Ironbark Living Records Project'.

Wednesday, June 12 **7.00pm**
Note earlier starting time
The workshop for the 12th June 2002, will be "Bird Bits - External Bird Morphology".
It will be conducted by Glenise Moors and will start at 7pm.
Ern Perkins, who has been very active in the box-ironbark campaign, will talk about 'Monitoring Changes in Box-Ironbark Forests'.
His talk will start at 8.00pm.

Bird Observers Group

This group meets (in the clubrooms) on the first Wednesday of the month at 7:30pm. Next meetings are on:
Wednesday, May 1 **7.30pm**
Topic and speaker to be determined

Wednesday, June 5 **7.30pm**
Topic and speaker to be determined

Fauna Study Group

Wednesday, May 22 **7.30pm**
John Grill will talk about native fish.

Other meetings planned so far:

June 26	Leadbeaters Possum - Speaker to be confirmed
July 24	Mountain Pygmy Possum - Kerrie Norris
August 28	Frogs by Night - on location at Kangaroo Flat Botanical Garden
September 25	A.G.M. - topic of interest to be announced.

Excursion

Could people interested in a day excursion to Healesville Sanctuary (for a behind-the- scenes tour) please contact Maurie Lewis (0407 427179) or Bill Holsworth (5443 4063)

Rally for Goolengook

Saturday 18th May

Corner of Flinders and Spencer Street Melbourne outside the ALP conference

with many other Bendigo 'Greenies'

Meet at Bendigo Station to take the 9.38am train arriving in Spencer Street at 11.23am, to return at 3.57pm. It would be great if we could fill a train carriage from Bendigo. If we have over 16 people travelling, the return cost will be $16.50 per person. Please phone Barbara on 54393075 and leave a message with your name and phone number to make a booking at this cheaper rate.

Bring banners, morning tea and lunch.

The Tasmanian Experience
by the Australian Naturalists Network

This year's ANN *GetTogether* in Tasmania will be happening November 9-18, 2002. The core program is based in Launceston, with pre-meeting activities centred around the North-East/East Coast (November 6-9) and post-meeting activities around North-West/West Coast (November 19-22).
See April *Whirrakee* for details.

Wildlife Rescue & Information Network Inc.

W.R.I.N. is an organisation dedicated to the care of orphaned, sick or injured native animals.
It is fully endorsed by the Dept of Natural Resources and Environment.
Please call our Emergency Number for Help for Fauna in Need. Phone: 0419 356433